

① $80 \cdot \frac{15}{60} = \underline{20 \text{ miles}}$ ② $.75 \cdot 40 = \underline{30 \text{ liters}}$ ③ $100 \cdot .04 \cdot 2 = \underline{\$8}$

④ $(30 \cdot .50) + (100 \cdot .25)$
 $15 + 25 = \underline{\$40}$ ⑤ A. because the % acid would not go up when you mix the two solutions

⑥ D

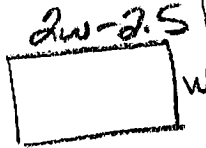
⑦ $P = 2l + 2w$

$40.6 = 2(2w - 2.5) + 2w$

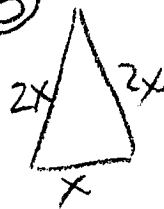
$40.6 = 4w - 5 + 2w$

$45.6 = 6w$

$\underline{w = 7.6 \text{ cm}}$



⑧



$2x + 2x + x = 30$

$5x = 30$

$x = 6$

Shortest side is 6 cm

⑨ $P = 2l + 2w$

$23803.2 = 2(x + 11757.6) + 2x$

$23803.2 = 2x + 23515.2 + 2x$

$4x = 288$

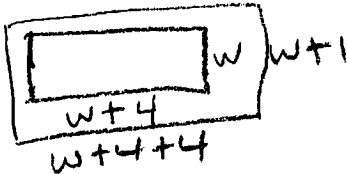
$x = 72 \text{ in}$

$\text{width } 72 \text{ in} = 2 \text{ yds}$

$\text{length} = 72 + 11757.6$

$\frac{11829.6}{36} = \underline{328.6 \text{ yds}}$

⑩



$P = 2l + 2w$

$30 = 2(w + 8) + 2(w + 1)$

$30 = 2w + 16 + 2w + 2$

$30 = 4w + 18$

$12 = 4w$

$3 = w$

$\text{width } 3 \text{ mm}$
 $\text{length } 7 \text{ mm}$

⑪ $V = \pi r^2 h$

$144\pi = \pi(6)^2 h$

$144\pi = 36\pi h$

$4 = h$

Height of box is 4 in

⑫ $IQ = \frac{MA \cdot 100}{CA}$

$130 = \frac{MA \cdot 100}{7}$

$100 \cdot MA = 910$

$\underline{MA = 9.1 \text{ years old}}$

⑬ $IQ = \frac{MA \cdot 100}{CA}$

$IQ = \frac{20 \cdot 100}{16}$

$IQ = \frac{2000}{16}$

$\underline{IQ = 125}$

⑭ a) $x = 4$ OK

b) $x = -3$ No

c) $x = 0$ No

d) $x = 7$ OK

⑮ $SA = 2lw + 2wh + 2hl$

$496 = 2(8)(8) + 2(8)h + 2h(8)$

$496 = 288 + 16h + 36h$

$208 = 52h$

$4 = h$

Height of box is 4 ft

Unit 7 Day 3 Continued 28-38 (e)

(28)	# of mL	(Strength) %	Resulting % - mL
Start	60	.20	.12
Add	X	.05	.05X
Finish Volume	60+X	.10	$\frac{.12 + .05X}{.10(60+X)}$

$$.10(60+X) = .12 + .05X$$

$$6 + .1X = .12 + .05X$$

$$600 + 10X = 1200 + 5X$$

$$5X = 600$$

$$X = 120$$

Add 120 mL of 5% acid

(30)	mL	Saline %	Resulting Strength
Start	8	.06	.48
Add	X	0	0
Finish Volume	8+X	.04	$\frac{.48}{.04(8+X)}$

$$.04(8+X) = .48$$

$$8+X = 12$$

$$X = 4$$

Add 4 mL of H₂O

(32)

	liters	Strength	Resulting Strength
92 oct	X	.92	.92X
98 oct	12-X	.98	.98(12-X)
Finish Volume	12	.96	$\frac{.92X + .98(12-X)}{.96(12)}$

$$.92X + .98(12-X) = .96(12)$$

$$92X + 98(12-X) = 96(12)$$

$$92X + 1176 - 98X = 1152$$

$$-6X = -24$$

$$X = 4$$

Mix 4 L of 92 octane with 8 L of 98 octane to create 12 L of 96 octane

(34)

let X = amt dep @ 4.5%

2X = amt dep @ 5%

4.5% earning + 5% earning = tot earning

$$.045X + .05(2X) = 2900$$

$$.045X + .1X = 2900$$

$$.145X = 2900$$

$$X = 20,000$$

20,000 @ 4.5%

40,000 @ 5%

(36) Invested = .7(200,000) = 140,000

let X = amt dep @ 8.5%

140,000 - X = amt dep @ 7%

8.5% earning + 7% earning = Total Earning

$$.085X + .07(140,000 - X) = 10,700$$

$$.085X + 9800 - .07X = 10,700$$

$$9800 + .015X = 10,700$$

$$.015X = 900$$

$$X = 60,000$$

Orlando invested

\$60,000 @ 8.5%

\$80,000 @ 7%